



Staff Summary Report

Council Meeting Date: 01-10-2008

Agenda Item Number: _____

SUBJECT: Request to award a one-year contract with four, one-year renewal options to HD Supply Waterworks Utility Service Group for water leak detection survey services in the City's drinking water infrastructure.

DOCUMENT NAME: 20080110fst04 **PURCHASES (1004-01)**

SUPPORTING DOCS: Yes

COMMENTS: (IFB #08-024RB) Total cost for this contract shall not exceed \$39,000 during the initial contract period.

PREPARED BY: Ted Stallings, CPPB, Procurement Officer, 480-350-8617

REVIEWED BY: Michael Greene, CPM, Central Services Administrator, 480-350-8516

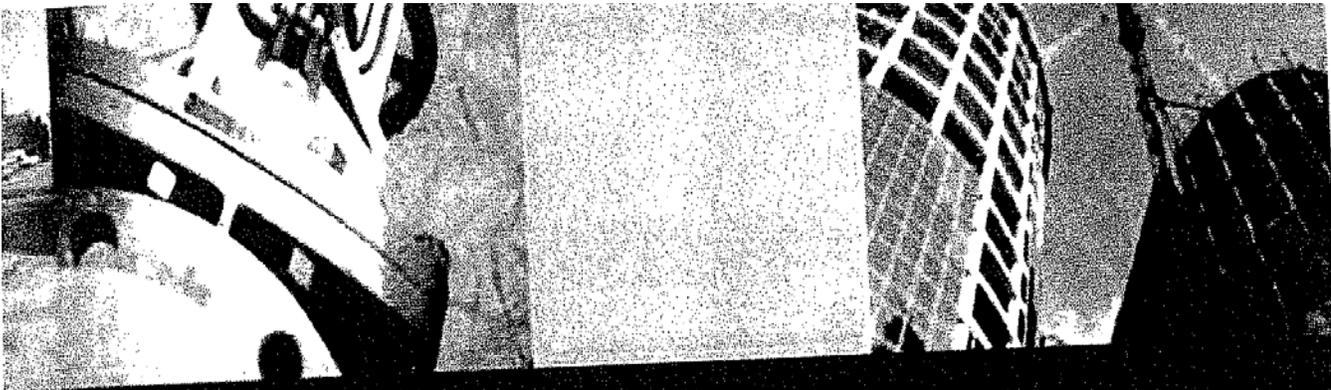
**LEGAL REVIEW AS
TO CONTRACT FORM**

ONLY: N/A

FISCAL NOTE: Sufficient funds have been appropriated in 3022-6672.

RECOMMENDATION: Award the contract.

ADDITIONAL INFO: Invitation for Bid (IFB) #08-024RB was issued to establish a contract for water leak detection survey services. Four vendors responded to the Invitation for Bid. An evaluation committee composed of Water Utilities and Procurement staff reviewed the responses. The committee's recommendation is to award the contract to HD Supply Waterworks Utility Services Group, the lowest responsive and responsible bidder whose bid complies in all material respects to the Invitation for Bid.



Proposal for:
Water Leak Detection Survey, IFB 08-024RB

Presented to:
City of Tempe, AZ

Submitted by:
HD Utility Services Group

Date:
November 12, 2007



**HD
SUPPLY**

WATERWORKS



Addendum to Solicitation



City Procurement Office/City of Tempe • PO Box 5002 • 20 East 6th Street • Tempe, AZ 85280 • (480) 350-8324 • www.tempe.gov/purchasing

This addendum will modify and/or clarify: Solicitation No.: | 08-024RB
and is Addendum No. | 1
Procurement Description: | Water Leak Detection Survey

Changes should be made as follows:

CHANGE: Proposal Due Date/Time from Wednesday, November 14, 2007 to *Wednesday, November 28, 2007, 3:00 P.M. Local Time*

DELETE: Price Sheet, pages 29.
ADD: Price Sheet dates 11/13/2007.

The following questions were received and answers given in response to this RFP.

1. What are the approximate number fire hydrants and valves in the City's water system?
Approximate 8,000 fire hydrants, 8,300 valve, and 45,000 all copper services connections.
2. The City's RFP states that the City will provide traffic control if needed. Can you provide more information?
The City will expect all contractor vehicles to have the proper lights, arrow boards and flagging capabilities as needed for normal safe operating conditions. If the need arises that a stop will require extra traffic control for safety the City will provide for barricades, extra flaggers, directional arrows, blocking vehicles etc. to complete the job safely. The City will meet with the contractor prior to work starting to determine the amount of support the Contractor will need from the City.
3. The City's RFP states that safety gear must be orange. Will the City allow the use of neon green/yellow vests with orange reflective tape?
The use of neon green/yellow vests will be acceptable if they meet the requirements of ANSI 107-1999. The vest tag should be state that the vest meets ANSI 107-1999. . Please see the Manual on Uniform Traffic Control Devices (MUTCD) chapter Ch6A-E which applies to employee safety apparel.

The balance of the specifications and bid solicitation instructions to remain the same. Bidders/Proposal Offerors are to acknowledge receipt and acceptance of this addendum by returning of signed addendum with bid/proposal response. Failure to sign and return an addendum prior to bid/proposal opening time and date may make the bid/proposal response non-responsive to that portion of the solicitation as materially affected by the respective addendum.

HD Supply Waterworks, Utility Services Group
NAME OF COMPANY
10013 MLK Jr. Way S
ADDRESS (or PO Box)
Seattle WA 98178
CITY STATE ZIP

Rob Meston, Branch Manager
BY NAME (please print) TITLE
800-621-9292
TELEPHONE

AUTHORIZED SIGNATURE

Contents

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Bid Offer

Vendor's Bid Offer

It is REQUIRED that Bidder COMPLETE, SIGN and SUBMIT the original of this form to the City Procurement Office with the bid response offer. An unsigned "Vendor's Bid Offer", late bid response and/or a materially incomplete response will be considered non-responsive and rejected.

Bidder is to type or legibly write in ink all information required below.

Bidder's Company Name	<u>HD Supply Waterworks, Utility Services Group</u>
Company Mailing Address	<u>10013 MLK Jr. Way South, Seattle, WA 98178</u>
Company Street Address	<u>10013 MLK Jr. Way South, Seattle, WA 98178</u>
Bid Offeror Contact	<u>Tom Ruppenthal</u> Title <u>Project Manager</u>
Contact's Phone No.	<u>800-241-3420</u> E-mail Address <u>tom.ruppenthal@hdsupply.com</u>
Bidder's Company Tax Information:	
Arizona Transaction Privilege (Sales) Tax No.	<u>N/A</u> or
Arizona Use Tax No.	<u>1009748</u>
Federal I.D. No.	<u>03-0550887</u>
City & State Where Sales Tax is Paid	<u>N/A</u> , _____

THIS BID IS OFFERED BY

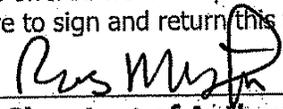
Authorized Bid Offeror (Type or Print in ink) Rob Meston

Bid Offeror's Title (Type of Print in ink) Branch Manager

Date 11/12/07

REQUIRED SIGNATURE OF AUTHORIZED BID OFFEROR (Must Sign in Ink)

By signing this Bid Offer, Bidder acknowledges acceptance of all terms and conditions contained herein and that prices offered were independently developed without consultation with any other bidder or potential bidder. Failure to sign and return this form with bid response will result in a non-responsive bid response.



Signature of Authorized Bid Offeror

11/12/07

Date

Quote Response



Utility Services Group
10013 MLK Jr Way S
Seattle WA 98178

t 206.725.3441
f 206.725.5932

November 26, 2007

City of Tempe -- City Procurement Office
Attn: Ted Stallings
20 East Sixth Street, 2nd Floor
Tempe, AZ 85281

Subject: IFB 08-024RB, Water Leak Detection Survey

Dear Mr, Stallings:

HD Utility Services Group would like to thank you for the opportunity to submit this proposal for your consideration for a Water leak Detection Study, as outlined in IFB 08-024RB.

Please let this letter act as confirmation in our interest in the project. HD Utility Services Group fully understands the Scope of Services as set forth in the IFB and we believe that our unique qualifications and the services that we can provide make us the best candidate for completing this work. Addendum No 1 has been signed and is enclosed in this response.

■ **Project Overview**

After reviewing information provided in the IFB as well as information on record from previous projects with the City of Tempe, we are certain we can identify areas of leakage in the distribution system, which when repaired, will reduce non revenue water loss for the City of Tempe. Our findings will also allow the City of Tempe to prioritize its replacement and repair projects and will aid in budgeting for future capital improvement projects by identifying which areas of the system need repair or replacement sooner.

According to our information the area specified for this water loss reduction project is 200 miles of distribution pipe of distribution pipe varying in sizes from 6" through 36". Pipe material consists of cast iron (CIP), ductile iron (DIP, asbestos cement (ACP) and plastic pipe (PVC). The remainder of the project will be performed on a schedule mutually agreed up with the City of Tempe.

We understand that this project may be extended by the City of Tempe for up to three years.

■ **Brief Company History**

HD Utility Services Group (formerly know as Utility Services Associates) was founded in Montana in 1985. The Company quickly grew and in 1994 the Company was sold to Western Utilities Supply Co. in Seattle, Washington, a wholesale distributor of waterworks and sewerage

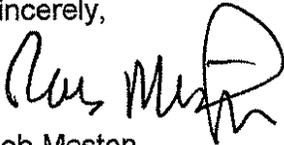
supplies with offices in 6 states. In 2000, Western Utilities Supply Co. was sold to Carolina Pump & Supply Corp. a Hughes Supply, Inc. company. Hughes Supply, Inc. was a 3 billion dollar wholesaler with 12 different product groups, all of which are in the construction industry. Hughes Supply, Inc. had over 400 offices in 33 states. In early 2006, Hughes Supply, Inc, including the Utility Services Group, was purchased by HD Supply and is now part its Waterworks division. The Utility Services Group continues to be managed from our Seattle, WA offices with the same experienced team.

■ Capabilities

With HD Utility Services Group backed by an 80 billion dollar corporation, we are able to invest a significant amount of resources into our growth. These resources represent a significant corporate investment into the HD Utility Services Group commitment of offering the latest technologies, equipment, procedures and methods to fulfill project commitments regardless of size and scope. This gives us an advantage our competitors do not have.

We look forward to assisting the City of Tempe with this important project. If you or your staff has any questions, please don't hesitate to contact us at 206-725-3441 or toll free at 1-800-621-9292.

Sincerely,

A handwritten signature in black ink, appearing to read "Rob Meston". The signature is stylized and cursive.

Rob Meston
Branch Manager

Price Sheet

Company Name: HD Supply Waterworks, Utility Services Group

Dated 11/13/2007

PRICE SHEET (Revised)

ITEM NO.	DESCRIPTION OF REQUIRED MATERIAL, SERVICE OR CONSTRUCTION	QTY	UNIT	UNIT PRICE
1.	Cost Per Mile for CIP, DIP, ACP - Include in your pricing all travel, per diem, shipping and freight charges and applicable taxes.	200	Miles	<u>\$ 176.79</u>
2.	Cost Per Mile for PVC - Include in your pricing all travel, per diem, shipping and freight charges and applicable taxes.	1	Mile	<u>\$ 353.58</u>
3.	Mobilization Costs (<u>one time</u> charge for this survey unless otherwise indicated) - Include in your pricing all travel, per diem, shipping and freight charges and applicable taxes.	1	One Time	<u>\$ 0.00</u>
4.	Spot Checking to locate leaks - Include in your pricing all travel, per diem, shipping and freight charges and applicable taxes.	1	Hour	<u>\$ 175.00 *</u>

* 2 hour minimum required. Minimum extended to 8 hours if service is desired when we are not in your area.

Qualifications

Company Profile

Today's complex water systems require professionals who are specialists, sensitive to the needs of the water purveyor. HD Utility Services Group works closely with system personnel, contractors and consultants to create a team of professionals that are geared to meet a client's specific needs.

With rising water rates, depleted sources and consumer awareness at an all-time high water leak detection has become the cornerstone of every conservation program. Water leak detection is an inexpensive, cost-effective solution in meeting federal conservation mandates.

This document pertains to our qualifications and to request that you consider HD Utility Services Group in any consulting assignments where a comprehensive approach is needed in this field of technology.

HD Utility Services Group operates under the HD Supply family of businesses, which is owned by the Home Depot. Together we leverage over 80 billion dollars of sales annually.

Specializing in Leak Detection

We are professionals working with other professionals and manufacturers, creating new technology as well as developing new procedures and methods, to better serve our industry.

We are always searching for new products and concepts, making us leaders in water conservation. This has given us, and the clients we work with, successes that would not be possible using only old leak detection methods.

We are independent of all equipment manufacturers and therefore are not limited to only one type of technology. Water system problems vary and as such the equipment and procedures must vary to find the proper solutions.

In leak detection we perform a comprehensive survey as our standard mode of operation. Accurately pinpointing leak locations is an art, which requires considerable training and experience. Leak sounds can be very misleading. Resonating leak sounds may be heard several hundred feet from their origin. We use the most advanced equipment and procedures to ensure that even the quietest leaks are pinpointed accurately.

Setting Industry Standards

HD Utility Services Group's associate membership and involvement in professional organizations and committees such as; American Water Works Association (AWWA), National Rural Water Association (NRWA), Underground Utility and Leak Locators Association (UULLA) and the AWWA Water Accountability Committee helps us stay abreast of changing trends in the industry. This allows us to act, not re-act to the problems of our clients.

Our Field Technicians are prepared and equipped for mobilization worldwide. We can work with small communities to find a single leak or large cities covering thousands of square miles.

At present we are working on or have completed projects ranging from 1 to 150 workings days. HD Utility Services Group has completed thousands of leak detection projects averaging over 3 1/2 miles per day, per unit, including survey and pinpointing (speed of a survey and leak quantity is dependent on project size and system condition).

Our goal is to continue to be first using and developing new proven technologies and procedures, allowing HD Utility Services Group to better serve our clients. We look forward to your further consideration on future projects.

HD Utility Services Group is Proud of Our Record

HD Utility Services Group has a reputation for speed and accuracy working with hundreds of communities saving millions of dollars and conserving water at the same time. A list of various references is enclosed.

Our Field Technicians are of the highest caliber and best trained in the world. They must complete comprehensive training courses and go through on the job training before performing a project independently. They are backed by professional staff with over 60 years combined knowledge in the utility business.

Furthermore, our technicians undergo annual audiograms (hearing test) to be certain that all, detectable leak sounds are addressed.

Attached is a brief resume of the key individuals that will be assigned, in some capacity, to this project.

Key Personnel Qualifications

The following key personnel will be assigned to this project.

Rob Meston – Branch Manager

Rob Meston started as a field technician with HD Supply (formerly Utility Services Associates) in 1990. Rob is one of the most senior leak detection experts in the country. In 1994 he was promoted to Consultant/Technical Support where he was responsible for the day-to-day activities of the field crews. In 1996 he was promoted to Branch Manager and has been responsible for all day-to-day activities of the Branch since then.

Bruce Rubin – Project Manager

Bruce Rubin attended Princeton University and completed his Associates Degree in Mechanical Engineering at Broome Technical College in Bingham, New York. After completing his education, Bruce acquired a position with IBM in the Space Systems Division. Bruce works out of the Montana Branch, where he is available to consult clients on Leak Detection, Water Audits, Tank Inspection, Corrosion Control and develop new procedures, methods, and products to keep HD Utility Services Group on the cutting edge. Bruce also helps coordinate scheduling and is available in an advisory capacity.

Tom Ruppenthal– Project Manager

Tom Ruppenthal graduated from Utah State University in Logan, Utah with a degree in Political Science with a strong emphasis put on Business and Economics and has a strong background in geophysical work. Tom has worked for HD Supply since 2002 Tom His ability and dedication enabled him to achieve a stellar reputation with all water districts with whom he has worked. In 2004 Tom accepted the position of Project Manager, giving him greater contact with clients to help them with water management through active leak detection promotion. He also conducts training courses as well as assisting in the field when necessary.

Jeff Ruppel–Senior Field Technician

Jeff attended Lake Shore Technical Institute and the University of Wisconsin before entering the utility field. Jeff has worked in the utility field for twelve years with Wisconsin Power and Light in Sheboygan, Wisconsin, The Department of Water and Power in Los Angeles, California and the Covington Water District in Kent, Washington before coming to HD Utility Services Group in 1994. Jeff is the primary technician for the east coast. His most recent project was a 75 mile project for the City of Cape Coral, FL.

Rick House–Field Technician

Rick attended Spokane Community College studying electrical maintenance and architectural drafting. He put his skills and education to use working for several construction contractors, performing a number of functions including electrical, carpentry and drywall. In March 2006, Rick joined HD Utility Services Group as a Field Technician. Rick works out of Seattle office and is available to travel anywhere in the US. His most recent projects included 100 mile project for the Eldorado Area Water and Sanitation District in Santa Fe, NM.

Geoff Ashworth–Field Technician

Geoff served for four years in the United States Marine Corp where he graduated from the combat engineering and non-commissioned officers course. Geoff is a highly trained, experienced leak consultant whose hard work and dedication have enables him to achieve a stellar reputation with all water districts with which he has worked. Geoff's attention to detail has made him one of the most accurate Field Technicians in the business. He recently completed a 34 mile project for the City of Olympia, WA.

Eric Kelsay–Field Technician

Eric attended Olympic College in Bremerton, WA studying electronics, engineering and welding. In March 2005, Eric joined HD Utility Services Group as a Field Technician. Eric is a highly trained, experienced technician whose hard work and dedication have earned him praise from many of the clients he has worked with. Eric works out of our Seattle, WA office and is available for travel anywhere. He recently completed a 248 mile project for the City of Goodyear, AZ.

Office Administrative Staff

Our office staff have extensive working knowledge of HD Utility Services Group policies and have assisted in the formulation of many of the procedures in place to better serve our clients, including maintaining all client files, accounting functions, contracts and safety management. Stephanie Davisson is Office Manager and oversees all clerical and procedural duties.

Robert Meston

Branch Manager

Education/ Employment

Robert Meston attended Green River Community College and Western Washington University, graduating with a degree in business.

He is a highly trained, experienced Leak Consultant with emphasis on correlator equipment operation since 1990. His attention to detail, hard work and dedication has earned him recognition with clients as one of the most accurate leak consultants in the country.

Summary of qualifications

With Rob's extensive travel overseas, he has become familiar with many unique water systems, enabling him to perform successful surveys where many other companies have failed.

Following 4 years fieldwork, Rob moved to our main branch in Seattle as Consultant/Technical Support. Rob was responsible for quality control and supervision of all Field Technicians.

Rob now works out of our corporate office in Seattle as Branch Manager. As a Quality Control Specialist, he supervises all outside leak consultants and day-to-day operations.

Rob has performed leak surveys from coast to coast with jobs as large as 750 miles. He travels wherever he is needed as tech support to solve those especially tough problems.

Professional memberships

Rob has conducted presentations throughout the country on the benefits of Water Leak Detection and serves as a member of the AWWA Water Accountability Committee.

References

Rob has been commended for his hard work and ability to get the job done accurately and thoroughly. A few of Rob's accomplishments include:

Commonwealth Utilities Corporation, Saipan

Located 16 leaks, saving the Utility 220,320 gallons of water per day.

Klamath Falls, Oregon

Located 27 leaks, saving the Utility 213,120 gallons of water per day.

Tacoma, Washington

Located 87 leaks, saving the Utility 1,173,600 gallons of water per day. After returning to Tacoma on a contract extension, Rob located an additional 1,500,000 gallons per day loss due to leakage.

Bruce Rubin

Project Manager/Marketing Manager

Education/ Employment

Bruce Rubin attended Princeton University and completed his Associates Degree in Mechanical Engineering at Broome Technical College in Bingham, New York.

After completing his education, Bruce acquired a position with IBM in the Space Systems Division before being transferred into Computer Hardware Systems in Boulder, Colorado. He then started JBM Engineering in Kalispell, Montana as owner and engineer until he sold the business in 1984.

Summary of qualifications

Bruce has worked with utilities and their problems for over twelve years with companies such as J&B Engineering and ZorWick Corporation.

Bruce's technical abilities have proven to be an exceptional asset to HD Supply Waterworks in the leak detection portion of our business. Bruce has been attributed with such advancements as Thermal Imaging and Infrared Accelerometer development in leak detection.

Bruce works out of the Montana Branch, where he is available to consult clients on Leak Detection, Water Audits, Tank Inspection, Corrosion Control and develop new procedures, methods, and products to keep HD Supply Waterworks on the cutting edge. Bruce also helps coordinate scheduling and is available in an advisory capacity.

References

The following is a sample of some of Bruce's most recently completed projects:

City of Albuquerque, NM – Water Audit/Leak Detection

City of Whitefish, MT – Water Leak Detection

City of Kalispell, MT – Water Leak Detection

City of Covington, WA – Tank Inspection

City of Seattle, WA – Thermal Imaging Project

United Water Services, NM – Water Leak Detection

City of Carlsbad, NM – Thermal Imaging Project

Tom Ruppenthal

Project Manager

Education/ Employment

Tom Ruppenthal graduated from Utah State University in Logan, Utah with a degree in Political Science with a strong emphasis put on Business and Economics. Tom also successfully passed several courses in Electronics Training, which help him when it comes to problem solving in field situations. Mr. Ruppenthal has a strong background in geophysical work.

Summary of qualifications

In 1978, Tom went to work for Mile Hi Exploration in Denver, Colorado where he spent time gathering seismic data. This job took Tom all around the country.

In 1979, Tom went to work for Sefel Geophysical. His duties at Sefel also included seismic data acquisition.

In 1982, Tom went to work for Sonic Exploration in Calgary, Canada where he managed the field crew. Sonic Exploration specialized in seismic location of fossil fuels.

In 1988, Tom, along with a partner, started Parker Home Improvements. Since 1988, the company has seen steady growth.

Tom liked the idea of new technology combined with the travel aspect and in 2002 Tom sold his share in Parker and joined HD Supply as a Field Technician. Tom's ability and dedication enabled him to achieve a stellar reputation with all water districts with whom he has worked. In 2004 Tom accepted the position of Consultant, giving him greater contact with clients to help them with water management through active leak detection promotion. He also conducts training courses as well as assisting in the field when necessary.

References

The following is a sample of some of Tom's most recently completed projects:

Clallum County PUD, WA

City of Coulee Dam, WA

City of Logan, UT

City of Bonney Lake, WA

City of Santa Fe, NM

City of Tempe, AZ

City of Logan, UT

Hill AFB, UT

Stephanie Davisson

Office Manager

Education/ Employment

Stephanie attended Highline Community College and in 1987 obtained an Associates degree. In addition, she has certificates in several continuing education courses on the use of office software programs.

Summary of qualifications

Stephanie worked in the banking industry for five years before joining our Seattle office in 1997. She has extensive working knowledge of office procedures and has assisted in the formulation of many of the procedures in place to better serve our clients.

In 2004, Stephanie was promoted to Office Manager and serves as operations coordinator for the Seattle main office and all satellite offices. She is currently responsible for maintaining all client files, accounting functions, contracts and safety management. Stephanie will continue to look for ways to streamline operations for better client satisfaction.

References

The following is a sample of some of projects where Stephanie assisted:

Clallum County PUD, WA

City of Albuquerque, NM

City of Tempe, AZ

City of Henderson, NV

LA County, CA

City of Hoquiam, WA

City of Santa Fe, NM

Gainesville Regional Utilities, FL

Andros Island, Bahamas

Virgin Islands Water & Power Authority, Virgin Islands

Jeff Ruppel

Senior Field Technician

Education/ Employment

Jeff Attended Lake Shore Technical Institute and the University of Wisconsin before entering the utility field.

Jeff has worked in the utility field for twelve years with Wisconsin Power and Light in Sheboygan, Wisconsin, The Department of Water and Power in Los Angeles, California and the Covington Water District in Kent, Washington before coming to HD Supply Waterworks in 1994.

Summary of qualifications

Jeff operates out of our main branch in Seattle and is available for travel worldwide.

Jeff's in-depth understanding of water systems as well as his attention to detail makes him an extremely accurate leak consultant.

References

Some of Jeff's most recent projects include:

Township of Cedar Grove, NJ

Virgin Islands Water & Power Authority, Virgin Islands

City of Corvallis, Oregon

City of Idaho Falls, Idaho

City of Kirkland, Washington

Fort Lewis, Washington

City of Albany, Oregon

Eugene Water & Electric Board, Oregon

City of Sacramento, CA

LA County, CA

Bowling Green, KY

City of Vancouver, Washington

Pohnpei Utility Corporation, Federal State of Micronesia

Geoffrey Ashworth

Senior Field Technician

Education/ Employment

Geoff served for four years in the United States Marine Corp where he graduated from the combat engineering and non-commissioned officers course.

Summary of qualifications

Geoff is a highly trained, experienced leak consultant whose hard work and dedication have enables him to achieve a stellar reputation with all water districts with which he has worked. Geoff's attention to detail has made him one of the most accurate Field Technicians in the business.

References

The following is a sample of some of Geoff's most recently completed projects:

- City of Enumclaw, Washington
- City of Tacoma, Washington
- O.I.C. Puget Sound Naval Shipyard, Washington
- City of Camas, Washington
- City of Puyallup, Washington
- City of St. Helens, Oregon
- City of Hillsboro, Oregon
- Clark County Public Utilities, Washington
- City of Bend, Oregon
- Clallam County Utility District, Washington
- City of Vancouver, Washington

Eric Kelsay

Field Technician

Education/ Employment

Eric attended Olympic College in Bremerton, WA studying electronics, engineering and welding. He put his skills and education to use at Suburban Propane, Greater Seattle Plumbing and Heating. Eric began working in the waterworks industry with Familian Northwest in their Tacoma branch.

In March 2005, Eric joined HD Supply Waterworks – HD Utility Services Group as a Field Technician.

Summary of qualifications

Eric is a highly trained, experienced technician whose hard work and dedication have earned him praise from many of the clients he has worked with. Eric works out of our Seattle, WA office and is available for travel anywhere.

References

The following is a sample of some of Eric's most recently completed projects:

City of Hoonah, AK

Arizona American Water, AZ

LA County Waterworks, CA

City of Sunnyvale, CA

Sacramento Suburban Water District, CA

City of La Grande, OR

City of Bonney Lake, WA

City of Hoquiam, WA

Highland Water District, WA

City of Eatonville, WA

Spanaway Water Company, WA

Rick House

Field Technician

Education/ Employment

Rick attended Spokane Community College studying electrical maintenance and architectural drafting. He put his skills and education to use working for several construction contractors, performing a number of functions including electrical, carpentry and drywall.

In March 2006, Rick joined Hughes Supply, Inc. – Utility Services Group as a Field Technician.

Summary of qualifications

Rick is a highly trained, experienced technician whose hard work and dedication have earned him praise from many of the clients he has worked with. Rick works out of our Seattle, WA office and is available for travel anywhere.

References

The following is a sample of some of Rick's most recently completed projects:

City of Quincy, WA

City of Logan, UT

Town of Silver City, NM

OMI, NM

City of Kalispell, NM

City of Bellevue, WA

Seattle Public Utilities, WA

Approach to Work

I. General

HD Utility Services Group surveys for and pinpoints water leaks using the latest in leak detection technology available. We use a sonic leak detection sound amplification instrument in conjunction with a sensitive transducer to conduct system surveys. We use various sophisticated equipment from correlators down to ground microphones to pinpoint system leakage. We have pipe tracing and box locating equipment available with each mobile unit. Trained, experienced professionals operate our equipment. **Our Field Technicians undergo an annual audiogram (hearing test).** A detailed report of leak locations, estimated gallon per minute (GPM) loss, and area covered is supplied daily. A Progress Report will be provided at the end of each calendar month. A Final Report will be provided within 14 days of the completion of the project.

II. Specifics

- A. The first step in our survey is to review the distribution maps of the City of Tempe's system for familiarization of the pipe network and available appurtenances (valves, services, hydrants, etc.) to be used as contact points. This initial review is helpful in developing the most efficient survey possible.
- B. As the leak survey progresses, HD Utility Services Group determines the distance that even quiet leak sounds travel in various pipe materials, pipe sizes and pressure zones in each area of the system. This will be done by slightly turning on fire hydrants, hose bibs, etc., creating a simulated quiet leak sound. Appurtenances in that area are then checked with a sound amplification instrument to see how far the simulated leak sound travels, thus determining how often HD Utility Services Group will make contact with appurtenances in given sections of the water distribution system.
- C. HD Utility Services Group then conducts a comprehensive survey by making physical contact with available main line appurtenances (valves, hydrants, etc.) and selected customer services. HD Utility Services Group uses a sonic leak detection sound amplification instrument designed for this purpose. **When surveying PVC pipe lines, HD Utility Services Group will make contact with all available appurtenances.**
- D. Contact is then made with pipe appurtenances at intervals no greater than 300 feet where contact points are available and accessible, or at pre-determined distances as noted in Paragraph B (whichever distance is less).

- E. When normal contact points are not available or can not be created within a reasonable distance, as described in Paragraph B, we will make an attempt to use a sonic ground listening instrument, making physical ground contact at intervals no greater than 6 feet directly over the pipe. If conditions do not allow this procedure, our Field Technicians will advise the City of Tempe at time of project and will detail in the Final Report. If excessive ambient noise precludes the effectiveness of the ground listening device in an area during daytime hours, we will schedule this portion of the survey for nighttime hours. We will pre-approve these situations with the City of Tempe. (Ground listening devices are employed when ground cover is pavement, cement, or a similar hard surface.) Direct contact to the main line at intervals outlined in Preparation for Service will result in the most thorough survey possible.
- F. When ground cover is not a hard surface, probe rods will be used at 6 feet intervals when normal contact points are not available (as described in paragraph B). A sound amplification instrument with 1.5VG or greater (volts per "G") transducer is used with probe rods. Probe rods will be driven into the ground at a minimum of 6 inches directly over the pipe when ground conditions allow. We will pre-approve these situations with the City of Tempe. If this can't be done for any reason, we will advise at the time of the project.
- G. If additional contact points are required to access the pipe with our equipment (in the event that standard procedures, mentioned above, can't be used) installation of permanent contact points is recommended. Guidelines will be provided, when required.
- H. HD Utility Services Group safety regulations do not allow the Field Technician to access any confined space, water lines located in any pit, underneath any facilities, manhole, vault or other area that may pose a hazard to HD Utility Services Group personnel. Only the City of Tempe's personnel shall be allowed, unless otherwise prohibited by City of Tempe's safety regulations, to access such areas, provided such personnel has been properly trained and equipped to do so. In such cases, the Field Technician shall direct where probes, sensors or other equipment shall be placed. Sections of lines that cannot be safely accessed will not be surveyed and will be noted as such in the Final Report. When surveying mobile homes, the skirting must be removed prior to our arrival to allow shut-off valves to be accessed.
- I. A detailed report of decibel levels at suspected leak sound locations and observations are compiled during the survey for reinvestigation and possible pinpointing at a later time. This reinvestigation is to increase the speed of the survey and will eliminate correlating on most false leak sounds (i.e. service draw).
- J. All indications of leaks found during the survey will be verified a second time, after which the leak shall be pinpointed with a **computer based leak sound correlator** whenever possible. Pinpointing leak locations through interpretation of sound intensity, either by ear, decibel metering or other like methods, is not used when contact points are available for use with the correlator.

- K. The equipment utilized does not normally require valves to be operated during surveying and pinpointing. However, on occasion, services or valves may need to be operated to eliminate service draw noises or to change velocity noise. The City of Tempe representative will do operation of appurtenances if required.
- L. The correlator equipment used will have the capability to prompt the operator to input the variables when different pipe sizes and/or pipe materials are encountered in the same span to be investigated. This is necessary to ensure accuracy of results based on the automatic computation of the correct leak sound velocity in leak pinpointing operations. Our correlator has the capability of correlating up to seven different pipe materials or diameters within the selected span. To insure effective performance in all field environments encountered in your distribution system (i.e. traffic noise, draw, pump operation, industrial noise, etc.) the correlator equipment provides 12 multi-range High and Low Pass filters. (FCS TriCorr). **A correlator will be on site at all times during leak detection projects.**
- M. Each leak will be classified according to size in gallons per minute (GPM) and hazard in order to aid in scheduling repairs. It should be noted that leak classification is not an exact science. In spite of the use of the most modern instrumentation, as well as complete training and experience by our Field Technician, it is impossible to determine the exact condition of underground piping without actually exposing the line. In view of this limitation, our classification (including estimated GPM loss) is intended as an aid in scheduling repairs based upon the information available, the Field Technician's judgment and site conditions at the time the leak report is being prepared. Variable factors beyond our control may alter this classification at any time. Once the leak is exposed for repair, the City of Tempe may wish to revise the estimated GPM loss in order to establish a more accurate estimate of actual water loss for reporting purposes. Leak Classifications are as follows:
- Class 1. Any leak which is hazardous in terms of potential undermining, possibly resulting in surface collapse, encroachment and/or damage to nearby utilities, commercial or private properties or leaks severe enough to warrant immediate repair.
 - Class 2. All leaks that display water losses significant enough to be monitored on a regular repair schedule.
 - Class 3. Relatively small leaks that should be repaired as workload permits.
- N. HD Utility Services Group will furnish Leak Reports when leaks are detected and shall also furnish a Progress Report at the end of each month. A Final Report will be provided within 14 days of the completion of the project. If required, HD Utility Services Group can modify or design any form to fit the City of Tempe's needs. The Final Report includes:

1. **Executive Summary** showing individually recorded time for correlating, surveying and other time spent on the project. This summary also includes footage covered, approximated gallons per minute (GPD) loss, types of leaks found, quantity of leaks found and remarks recommending improvements that may be made to the distribution system.
 2. **Project Observations** detailing the remarks and observations of field personnel including recommendations.
 3. **Survey Review** explaining the procedures and methods used during this study.
 4. **Area Survey Reports** listing the areas surveyed, including distances, number and type of appurtenances contacted, suspect system noises detected with decibel levels, time spent surveying and observations. Separate reports will be prepared for areas surveyed using a ground listening device.
 5. **Leak Reports** with a detailed drawing showing each leak location that was pinpointed, the type of leak found, classification, approximated time spent pinpointing, an estimate of the GPM lost, cover type, if leak location was marked and computer justification when applicable. (This same leak report shall be supplied daily to the City of Tempe when leaks are found.)
- O. Whenever the City of Tempe repairs any leak detected by HD Utility Services Group prior to completion of the field work, HD Utility Services Group shall re-survey that section of the system to be sure no extremely quiet leaks were missed due to an over powering noisy leak sound or other variable.
- P. HD Utility Services Group will furnish a trained Field Technician, leak detection instruments and equipment and tools to complete the survey and leak pinpointing.
- Q. The City of Tempe will is requested to provide a qualified maintenance person to provide information to the consultant regarding the system and to locate and operate valves, services, hydrants, etc. throughout the duration of the project. From time to time, our crews are required to work alone, usually due to lack of a client's manpower. We strongly discourage this. It is important to ensure that no portions of the system are inadvertently missed. A City of Tempe representative is also needed to provide equipment such as flags, traffic cones, etc. to meet local, state, and federal regulations in controlling vehicular traffic. Heavy traffic areas will be scheduled for nighttime hours to ensure man and equipment safety as well as reduce amount of ambient noise. However, nighttime work is usually limited to a small part of the system.
- R. It is important to note that not all leaks create noise levels that can be detected using even the most sophisticated leak detection instrumentation. HD Utility Services Group will perform all work at the highest level of professional workmanship in its industry; however, we cannot guarantee the detection of any leak.

Sample Reports

Section 6

Sample Report

Attached is a sample of a Final Report. This is only a sampling and does not include many of the leaks described in the Executive Summary. The reports provided to the City of Tempe may be slightly different depending upon the specific results and recommendations by our field personnel.



Water Distribution Line Leak Location Project Final Report

**Prepared for
City of Hayward, CA Public Works**



**Project Dates:
10/30/06 to 02/16/07**

**Prepared by:
HD Supply Waterworks
Utility Services Group
10013 MLK Jr. Way S
Seattle, WA 98178**

Section 1	Cover Letter
Section 2	Executive Summary
Section 4	Survey Review
Section 5	Pinpointing Review
Section 6	Project Observations and Recommendations
Section 7	Concluding Remarks
	Appendix A
	* System Side Leak Reports
	* Undefined Leak Reports
	* Possible Consumer Side Leak Reports
	Appendix B
	* Area Survey Reports

Cover Letter



Utility Services Group
10013 MLK Jr. Way South
Seattle, WA 98178

206 725 3441
206 725 5932

July 12, 2007

City of Hayward Public Works
Attn: Rod Schurman
777 B Street, 4th Floor
Hayward, CA 94541-5007

Dear Mr. Schurman

HD Supply Waterworks, HD Utility Services Group is pleased to submit the enclosed Final Report on leak detection services recently completed.

A total of approximately 330.39 miles (estimated by Field Technician) were surveyed, including all intersecting lines. Approximately 452.11 hours of fieldwork were spent during this project. A total of sixteen (16) leaks were pinpointed. Additionally, three (3) consumer side leaks were noted, as detailed in this Final Report. Water loss due to leakage was estimated to be, excluding undefined and consumer side leaks, approximately 77,400 GPD. Details of this information are enclosed.

It should be noted that we have listed one area as an "Undefined Leak Report." This is an area where we believe one or more leaks exist, however after spending considerable time at this location, we could not pinpoint the suspected leakage. This may be due to one or more of many different variables, including: poor sound travel, limited number of appurtenances, etc. For further information and/or assistance, please call our main office.

Please note that leakage that was detected and pinpointed may be larger or smaller than estimated. Estimates are based on several variables including type and size of pipe, pressure and interpretation of correlation filter results.

As you review this Final Report, please pay close attention to the Field Technician's remarks and field observations in the Project Observation section of this report. These may assist you in determining the best course of action regarding specific leaks.

We strongly suggest you contact us prior to excavating any leak that we have labeled with "CAUTION" for further explanation.

The leak detection survey is productive since we pinpointed leakage that, when repaired, can reduce your water loss, saving the «Company» dollars now and in the future. We appreciate your confidence in HD Supply Waterworks. If you have any questions, call us at (800) 621-9292 or (206) 725-3441.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rob Meston', is written over a circular stamp or mark.

Rob Meston
Manager

/ Executive Summary

EXECUTIVE SUMMARY

From 10/30/06 to 02/16/07, HD Supply Waterworks, Utility Services Group, provided a leak survey for the City of Hayward, CA. We utilized the latest in leak detection technology available. We employed extremely sensitive sound amplification instruments for the survey and a computer based correlator for leak pinpointing whenever possible. The table below details the information gathered.

Report Period:	10/30/06 to 02/16/07
Total time spent surveying:	340.35 Hours
Total time spent pinpointing:	9.83 Hours
Other time spent on the project:	101.93 Hours
Field Technician Assigned:	Rick Cabral
Client representative Assigned (helper):	Adrian Lopez
Total Distance Surveyed (miles)	330.39
Total Distance Surveyed (feet)	1,744,484
Average Leak Rate (Gallons per minute):	3.16
Average Leak Rate (Gallons per day):	-4,552.94
Average Leak Rate (Gallons per year):	1,661,823.5
Total Leak Rate (Gallons per minute):	53.75
Total Leak Rate (Gallons per day):	77,400
Total Leak Rate (Gallons per year):	28,251,000

Access points contacted:

Hydrants	Valves	Services	Other	Total
2,975	4,126	1,491	1	8,593

Leaks detected by type:

Mainline	Valve	Hydrant	Meter	Curbstop	Service	Other
2	2	5	2	0	4	4

Leaks detected by frequency:

Hydrant	Service	Mainline	Valve	Meter	Other	Curbstop
5	4	2	2	2	1	0

On February 16, 2007, HD Utility Services Group completed a water leak detection project for the City of Hayward, CA .. Approximately 330.39 miles were surveyed. This measurement may differ slightly from the City's estimate due to the mechanics of measuring pipeline from system maps.

Many of the lines were surveyed at night to accommodate high traffic areas. Areas where plastic pipe were surveyed, a point-to-point methodology was used. Some newer areas of the system were not surveyed. Instead this project focused on the older areas.

As a result of our survey, HD Utility Services Group pinpointed 16 leaks. Leak noise detected at the High School Reservoir could not be pinpointed and was marked "Undefined". The vault was full of water and at the time we recommended that the vault be pumped out to allow for a visual inspection. In addition, three possible consumer side leaks were detected. These were not pinpointed but were noted for follow-up.

The system is ideal for leak detection (good sound travel, good access through valves, etc.). Maps were excellent. For the most part, valves, services, hydrants, etc. were in good condition. Most valve boxes were clean, although some valves were difficult to locate.

It appears that many of the meters in the system are very old, which can contribute to the non-revenue water loss problem. We suggest that the meter replacement program, currently changing to AMR, be accelerated to minimize losses through slow meters.

It appears there is a great deal of old pipe in the ground. While our survey did not identify a high volume of through leaks, older pipe is logically more likely to fail. As with the meter program, we suggest an accelerated line replacement program.

Survey Review

LEAK SURVEY REVIEW (Water Distribution Lines)

The first step in our survey was to review the distribution maps of the system for familiarization of the pipe network and available appurtenances to be used for contact points.

As the leak survey progressed, we determined the distances that even quiet leak type sounds traveled in various pipe materials, pipe sizes and pressure zones in each area of the system. This was done by slightly turning on fire hydrants, hose bibs, etc., creating a simulated, quiet leak sound. Appurtenances in that area were then checked with a sound amplification instrument to see how far the simulated leak sounds traveled, thus determining how often we would make contact with appurtenances in a given section of the water distribution system. In most areas, contact was made with pipe appurtenances at intervals no greater than 350 feet where contact points were available and accessible. This allowed for even more quiet leaks to be located. Whenever we surveyed PVC lines, all available appurtenances were contacted.

We then conducted a comprehensive survey by making physical contact with all available main line appurtenances (valves, hydrants, etc.) and necessary customer services. HD Utility Services Group used a sonic leak detection amplification instrument designed for this purpose.

Appurtenances Surveyed	
Hydrant	2,975
Valves	4,126
Services	1,491
Other	1
Total	8,593

When normal contact points were not available or could not be created within a reasonable distance, we made an attempt to use a sonic ground listening instrument to make physical ground contact at intervals no greater than 6 feet directly over the pipe. If conditions did not allow this procedure our Field Technician advised you at time of project and notes of such are included in the Project Observations. Ground listening devices are employed when ground cover is pavement, cement or similar hard surface.

When ground cover was not a hard surface and normal contact points were not available, we made an attempt to use probe rods or a specially designed sounding plate at 6-foot intervals. A sound amplification instrument with 3VG or greater transducer was employed in conjunction with this equipment, directly over the pipe. If conditions did not allow this procedure our Field Technician advised you at time of project and was detailed in the Project Observations section

of this Final Report. Direct contact to the main line at intervals outlined in Preparation for Service resulted in the most thorough survey.

Areas surveyed	
General Area	Miles Surveyed
East	192.5078
West	128.1208
Southeast	9.761364
	330.39

A detailed report of decibel levels at suspected leak sound locations and observations were compiled during the survey for reinvestigation and possible pinpointing at a later time. This reinvestigation increased the speed of the survey and eliminated correlating on most false leak sounds.

Leak Noises Detected	
Contact Points	Leak Noises Detected
Hydrant	44
Valves	16
Services	17
Other	
Total	77

All indications of leaks found during the survey were verified a second time, after which, the leaks were pinpointed with a computer based sound correlator when possible. Pinpointing information can be found in the Pinpointing and Leak Reports Sections.

Pinpointing Review

LEAK PINPOINTING REVIEW (Water Distribution Lines)

All indications of leaks found during the survey were verified a second time, after which, the leaks were pinpointed with a computer based sound correlator when possible. Pinpointing leak locations through interpretation of sound intensity, either by ear, decibel metering or other like methods was not used when contact points were available for use with the correlator. However, ground listening devices were used as a quick double check on pinpointed leaks.

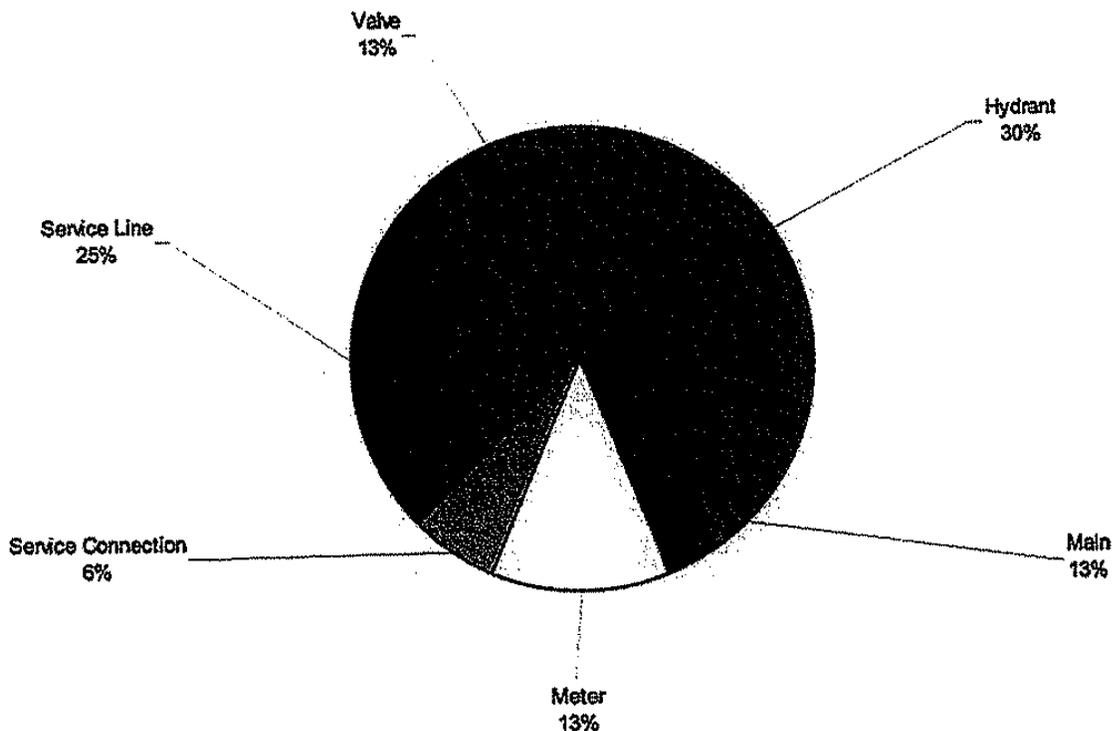
The equipment used did not normally require valves to be operated during surveying and pinpointing. However, on occasion, services or valves were operated to eliminate service draw noises or to change velocity noise.

The correlator equipment used had the capability to prompt the operator to input the variables when different pipe sizes and/or pipe material were encountered in the same span to be investigated. This is necessary to insure accuracy of results based on the automatic computation of the correct leak sound velocity in leak pinpointing operations. Our correlators have the capability of correlating up to seven various pipe sizes and types at one time in a given space. To insure effective performance in all field environments encountered in the distribution system (i.e. traffic noise, draw, pump operation, industrial noise, etc.), the correlator equipment provides 12 multi-range High and Low Pass filters.

We provided a copy of leak reports, when pinpointed, which included leak locations and estimated GPM loss.

Leaks Pinpointed		
Leak Type	Leak Location	Water Loss (GPM)
Valve	Tennyson Rd & Oliver Dr	.5
Service Line	1580 West Winton St	20
Service Connection	2346 Cliffwood Ave	5
Main	1198 Tiegen Dr	5
Service Line	A St & Maple Ct	10
Service Line	22104 Mission Blvd	2
Meter	31211 Faircliff St	.5
Hydrant	Cornell Ave & Seneca St	2
Service Line	24048 Edloe Dr	5
Hydrant	24041 Edloe Dr	.25

Hydrant	Wingate Wy & Arlette Ave	.25
Hydrant	1585 Ward St	.25
Valve	21620 Prospect Ct	.25
Main	440 Smalley Ave	2
Meter	22163 Montgomery St	.5
Hydrant	1717 Richard Ln	.25
Total		53.75



These leak reports, also included a leak repair priority classification. These classifications are as follows:

- Class I** Any leak which is hazardous in terms of potential undermining, possibly resulting in surface collapse, encroachment and/or damage to nearby utilities, commercial or private properties or leaks severe enough to warrant immediate repair.
- Class II** All leaks that display water losses significant enough to be monitored on a regular repair schedule.
- Class III** Relatively small leaks that should be repaired as workload permits.

Recommended Repair Priority		
Leak Class I	Leak Location	Water Loss (GPM)
Main	1198 Tiegen Dr	5
Main	440 Smalley Ave	2
Service Connection	2346 Cliffwood Ave	5
Service Line	A St & Maple Ct	10
Service Line	1580 West Winton St	20
Total Class I		42
Leak Class II	Leak Location	Water Loss (GPM)
Meter	22163 Montgomery St	.5
Service Line	22104 Mission Blvd	2
Service Line	24048 Edloe Dr	5
Valve	Tennyson Rd & Oliver Dr	.5
Total Class II		8
Leak Class III	Leak Location	Water Loss (GPM)
Meter	31211 Faircliff St	.5
Hydrant	Cornell Ave & Seneca St	2
Hydrant	24041 Edloe Dr	.25
Hydrant	Wingate Wy & Arlette Ave	.25
Hydrant	1585 Ward St	.25
Valve	21620 Prospect Ct	.25
Hydrant	1717 Richard Ln	.25
Total Class III		3.75

Whenever any of the leaks detected by HD Utility Services Group were repaired prior to completion of the field work, we gave the Client the option to have that section of the system re-surveyed to be sure no very quiet leaks were missed due to an over powering noisy leak sound.

Please note that leakage that was detected and pinpointed may be larger or smaller than estimated. Estimates are based on several variables including type and size of pipe, pressure and interpretation of correlation filter results.

It should be noted that we have listed «undefined» («und_no») areas as "Undefined Leak Reports". These are areas where we believe one or more leaks exist, however, after spending considerable time at each location, we could not pinpoint the suspect leakage. This may be due to one or more of many different variables including; poor sound travel, limited number of appurtenances, etc. For further information and/or assistance, please contact our main office.

Undefined Leaks		
Leak Type	Leak Location	Water Loss (GPM)
Undefined	High School Reservoir	Unknown
Total		

In addition, possible consumer side leaks were noted. These were not pinpointed but the following list has been provided for your convenience.

Possible Consumer Side Leaks	
Leak Location	Notes
2241 Laguna Dr	Constant flow showing on meter
24555 Eden Ave	Noise detected but no usage showing on meter.

Project Observations and Recommendations

PROJECT OBSERVATIONS

(Water Distribution Lines)

GENERAL

On February 16, 2007, HD Utility Services Group completed a water leak detection project for the City of Hayward, Ca. This project was performed beginning October 30, 2006 and was completed in forty-seven (47) days. While originally contracted for 344.5 miles, the mileage actually surveyed was 330.39. This measurement may differ slightly from the City's estimate due to the mechanics of measuring pipeline from system maps.

SPECIFICS

The survey was broken down in two different phases:

1. Survey Phase – sounding of appurtenances and recording leak type noises that were detected.
2. Pinpointing Phase – pinpointing noises that were detected during the Survey Phase.

1. Survey Phase Information

The Project was broken into several different time frames, which follow:

<u>Date Range</u>	<u>Technician</u>
10/30/06 through 11/10/06	Rick Cabral
11/27/06 through 12/08/06	Rick Cabral
12/11/06 through 12/15/06	Rick House
01/02/07 through 01/19/07	Rich Cabral
01/29/07 through 02/19/07	Rick Carbral

Many of the lines were surveyed at night to accommodate high traffic areas. Areas where plastic pipe were surveyed, point-to-point methodology was used. Some newer areas of the system were not surveyed. Instead this project focused on the older areas. Main lines surveyed were comprised primarily of AC, metal and plastic pipe material. Service lines were primarily copper, PVC or galvanized pipe. Many mainlines in the survey areas dated from the 1920's. All PVC service lines were surveyed "short side". Areas where there was limited access, a ground microphone was utilized.

Any anomalies have been noted in the Observation section of the Area Survey Reports. A large number of very old meters were found to be still in use. These should be inspected for integrity and replaced or repaired as needed to improve the accuracy of meter readings.

All indications of possible leaks were noted for further investigation during the pinpointing phase.

2. Pinpointing Phase Information

As a result of our survey, we were able to locate and pinpoint sixteen (16) leaks. In addition, we have listed one (1) area as "undefined". Please refer to individual leak report for details of each leak located. The information below is provided for specific high priority leaks.

Leak Report #2 – 1580 West Winton St. When repaired, this service line was found to be drilled through a sewer line and had been leaking for some time. This line was again surveyed following repair. No additional leaks were detected at this time.

Leak Report #3 – 2346 Cliffwood was also repaired while we were onsite. No additional leaks were detected.

Leak Report #4 – 1198 Tiegen Dr. Further investigation following repair allowed us to locate several lost valves and locate lines.

Leak Report #6 – 1065 A St. An additional leak was detected following the repair of this leak. Leak type noise, however stopped when the valve to this service line was shut down. The 2" meter may not be closing completely. If this does not stop the leak noise, further action will be required and service line replacement may be needed.

Leak Report #14 – 440 Smalley Ave. A possible 2nd leak was suspected, but not pinpointed as we were informed that the entire service line is to be scheduled for replacement.

Undefined Leak Report #U1 – High School Reservoir. A great deal of leak type noise was detected at the vault, which was full of water. The water could be seen to move, indicating that it was continuing to flow. We recommend that the vault be pumped out to allow for a visual inspection.

Please note that leakage that was detected and pinpointed may be larger or smaller than estimated. Estimates area based on several variables including type and size of pipe, pressure and interpretation of correlation filter results.

RECOMMENDATIONS

The System is ideal for leak detection (good sound travel, good access through valves, etc.). Maps were excellent. For the most part, valves, services, hydrants etc, were in good condition. Most valve boxes were clean, although some valves were difficult to locate.

It appears that many of the meters in the system are very old, which can be a large part of the non-revenue water loss problem. We suggest that the meter replacement program be accelerated to minimize losses through slow meters.

We also encourage the city to consider a multi-year contract, working through zones versus the entire system every few years or so. This allows for a systematic approach and also is more efficient in obtaining the desired results of lowering water loss in the system by finding leaks before they get larger as well as minimizing the actual length of time the line is leaking.

Finally it appears there is a great deal of old pipe in the ground. While our survey did not identify a high volume of loss through leaks, older pipe is logically more likely to fail. As with the meter program, we suggest an accelerated line replacement program.

CONCLUSION

In addition to the leak detection survey and pinpointing performed, we also assisted in demonstrating and training on the use of a Subsurface LD-12 Acoustic Leak Detection Device, which the City of Hayward recently purchased. This device will be beneficial to the city on an individual leak location basis, however we recommend a regular survey (yearly) be performed by a knowledgeable service company.

We would like to thank Adrian Lopez for field assistance. We look forward to being of service to the Blue Ridge Rural Water Company on future conservation programs.

Compiled from field notes respectfully submitted by:

Rick Cabral
Rick House
Field Technician

Concluding Remarks



Utility Services Group
10013 MLK Jr. Way South
Seattle, WA 98178

206 725 3441
206 725 5932

LEAK SURVEY CONCLUSION

Our thanks to Rod Schurman and all persons involved with this project for their assistance in gathering all the necessary paperwork and personnel to create, with HD Supply Waterworks, a mutually beneficial leak detection project.

With this survey you have demonstrated concern for prudent water utilization and conservation.

Capitalizing on the most advanced leak detection technology available today, HD Utility Services Group has successfully completed this Leak Detection Survey. The contents of this Final Report provide the City of Hayward with a permanent record of the activities performed to complete a Leak Survey along with the results achieved.

An important characteristic of this Leak Report is that the facts contained herein can be used in formulating a database for decision making regarding: the need for possible future meter programs, rehabilitation and pipe line replacement and/or the investigation of new water sources, etc. These types of decisions, regarding your utilization of water, now can be predicated more on facts rather than supposition or conjecture.

Prompt repair of any leaks reported provide an immediate benefit to the City of Hayward, which includes recovery of most water revenue and water conservation, etc.

Having achieved these results, we recommend that you continue to set up the infrastructure necessary to continue investigating leakage in the water distribution system. Implementation of any on-going leak survey program will ensure that leak losses are kept to a minimum, and the added enhancement of saving costs due to emergency call outs.

HD Supply Waterworks Supply, Inc., Utility Services Group is proud to have served the City of Hayward in this way and we wish to thank you for your substantial assistance and cooperation in this project.

If you or your staff has any questions regarding this Final Report, please feel free to call us at (800) 621-9292 or (206) 725-3441.

Best Regards,

A handwritten signature in black ink, appearing to read 'Rob Meston', is written over the 'Best Regards,' text.

Rob Meston
Manager

Appendix A

System Side Leak Reports

Undefined Leak Reports

Possible Consumer Side Leak Reports

LEAK REPORT

Hughes Utility Services

Repair Date: _____ GPM's _____

Remarks _____

Date 11/06/2006

Location Tennyson Rd & Oliver Dr

Remarks Hydrant valve packing leak.

Leak Type

VALVE

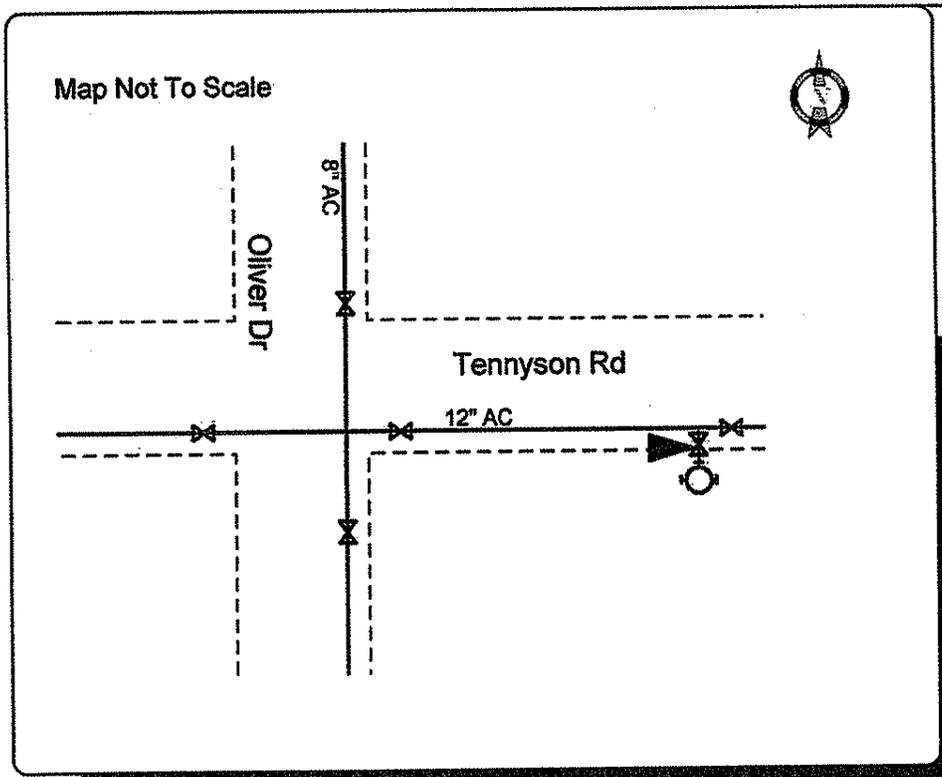
Time spent pinpointing
10 minutes

Leak Site Marked No

Cover Type:

Computerized Correlator Results	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Correlation Scan Time												
Band Pass Filter Setting	0	0	0	0	0	0	0	0	0	0	0	0
Correlated Point Height	0	0	0	0	0	0	0	0	0	0	0	0
Footage from "A"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Leak # 1 **Estimated GPM** 0.50 **Leak Classification** II



Water loss (this leak, in gallons)

DAILY	720
WEEKLY	5,040
MONTHLY	22,320

▲ = Location of Leak

Technician RC
Job # 62459
Page 1

LEAK REPORT

Hughes Utility Services

Repair Date: _____ GPM's _____

Remarks _____

Date 11/07/2006

Location 1580 West Winton St

Remarks Large service line leak. No correlations. Pinpointed using ground microphone.

Leak Type
SERVICE LINE

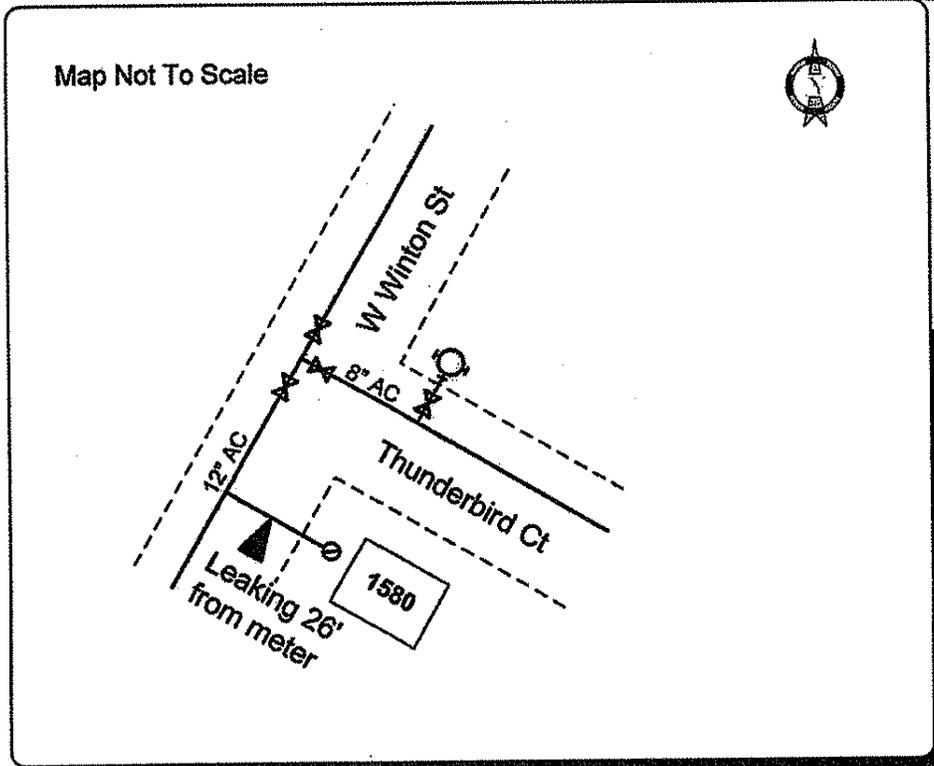
Time spent pinpointing
45 minutes

Leak Site Marked No

Cover Type:
Asphalt

Computerized Correlator Results	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Correlation Scan Time												
Band Pass Filter Setting	0	0	0	0	0	0	0	0	0	0	0	0
Correlated Point Height	0	0	0	0	0	0	0	0	0	0	0	0
Footage from "A"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Leak # 2 **Estimated GPM** 20.00 **Leak Classification** 1



Water loss (this leak, in gallons)

DAILY	28,800
WEEKLY	201,600
MONTHLY	892,800

= Location of Leak

Technician RC
Job # 62459
Page 2

LEAK REPORT
Hughes Utility Services

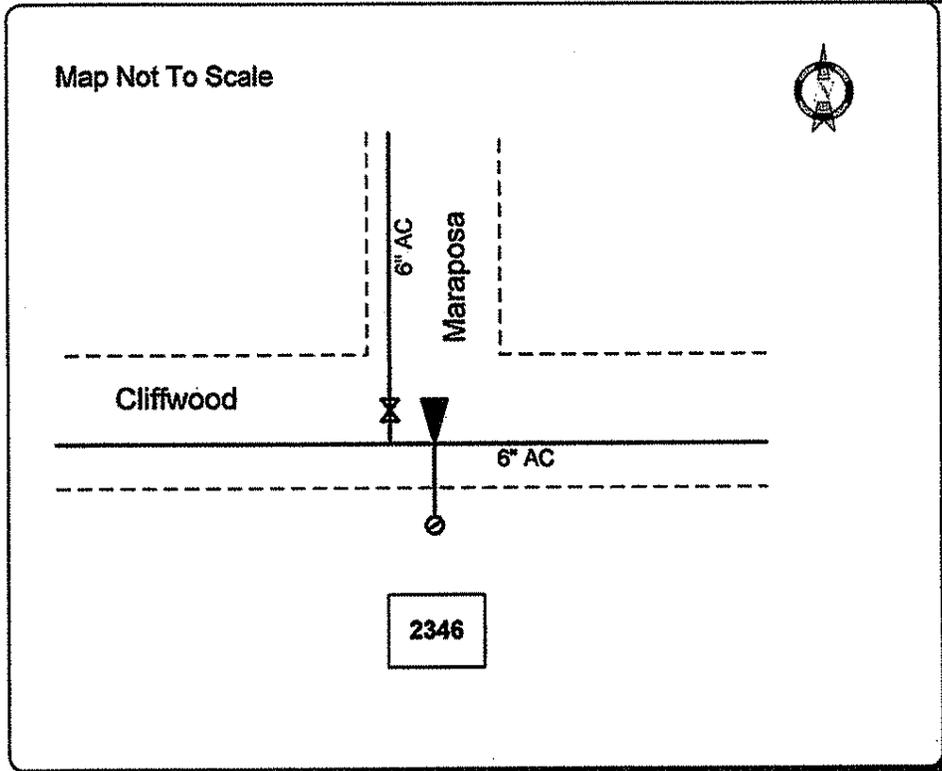
Repair Date: _____ GPM's _____
 Remarks _____

Date 11/10/2006
Location 2346 Cliffwood Ave
Remarks Leak at service line connection to main. Pinpointed using ground microphone only.

Leak Type
 SERVICE CONN
 Time spent pinpointing
 30 minutes
 Leak Site Marked No
 Cover Type:
 Asphalt

Computerized Correlator Results	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Correlation Scan Time												
Band Pass Filter Setting	0	0	0	0	0	0	0	0	0	0	0	0
Correlated Point Height	0	0	0	0	0	0	0	0	0	0	0	0
Footage from "A"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Leak # 3 **Estimated GPM** 5.00 **Leak Classification** I



Water loss (this leak, in gallons)

DAILY	7,200
WEEKLY	50,400
MONTHLY	223,200

= Location of Leak

Technician RC
 Job # 62459
 Page 3

LEAK REPORT

Hughes Utility Services

Repair Date: _____ GPM's _____

Remarks _____

Date 02/19/2007

Location High School Reservoir (map page 1542W434)

Remarks Vault at High School Reservoir full of water. A lot of noise was detected on line in vault. Recommend pump out vault for visual inspection.

Leak Type
UNDEFINED

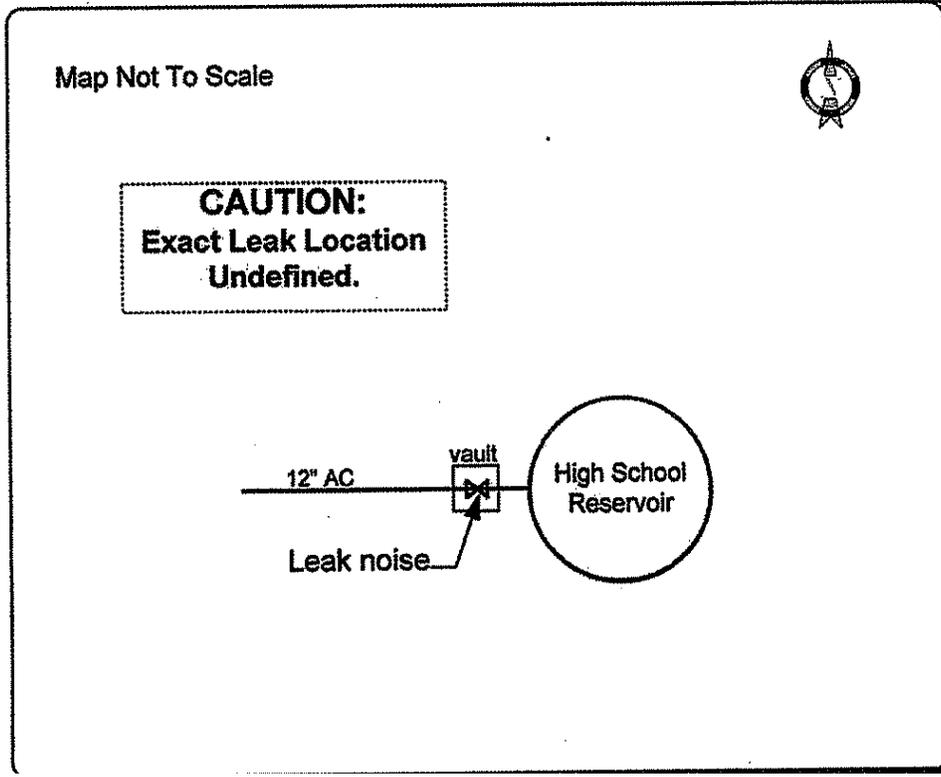
Time spent pinpointing
20 minutes

Leak Site Marked No

Cover Type:
Soil

Computerized Correlator Results	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Correlation Scan Time												
Band Pass Filter Setting	0	0	0	0	0	0	0	0	0	0	0	0
Correlated Point Height	0	0	0	0	0	0	0	0	0	0	0	0
Footage from "A"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Leak # U1 **Estimated GPM** 0.00 **Leak Classification**



Water loss (this leak, in gallons)

DAILY	0
WEEKLY	0
MONTHLY	0

Undefined = Location of Leak

Technician RC
Job # 62459
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LEAK REPORT

Hughes Utility Services

Repair Date: _____ GPM's _____

Remarks _____

Date 01/18/2007

Location 2241 Laguna Dr

Remarks Constant usage showing on meter. No one home to verify draw. Leak noise persists when meter is shut down.

Leak Type

CONSUMER SIDE

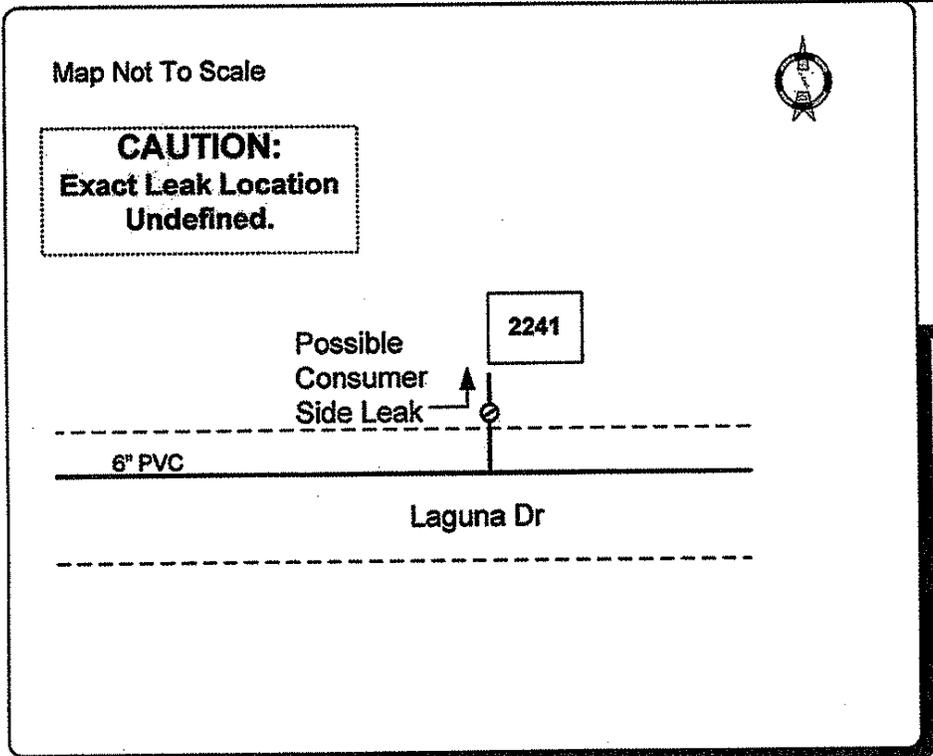
Time spent pinpointing
0 minutes

Leak Site Marked No

Cover Type:
Soil

Computerized Correlator Results	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Correlation Scan Time												
Band Pass Filter Setting	0	0	0	0	0	0	0	0	0	0	0	0
Correlated Point Height	0	0	0	0	0	0	0	0	0	0	0	0
Footage from "A"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Leak # A **Estimated GPM** 0.00 **Leak Classification**



Water loss (this leak, in gallons)

DAILY	0
WEEKLY	0
MONTHLY	0

Consumer Side = Location of Leak

Technician RC

Job # 62459

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Appendix B
Area Survey Reports

AREA SURVEY REPORT
Hughes Utility Supply

Remarks _____

Date 10/30/2006 **General area** West

Contact points	Hydrants 47	Valves 58	Services 0	Other 0
-----------------------	--------------------	------------------	-------------------	----------------

Survey Start Points	Survey End Points	Distance (feet)
Barrington Ct & Cabot Blvd	end of Barrington Ct	1692
Cabot Blvd & Depot Rd	end of Cabot Blvd	7898
Cabot Blvd & Davis Ave	end of Davis Ave	2296
Intersecting Lines surveyed		5062
Total miles 3.2		feet 16948

Start time 11:00 AM **End time** 1:00 PM **Total minutes** 120

LEAK SOUNDS		
	Location/Address	Access Point DB Lvl
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		

Valves	0
Hydrants	0
Services	0
Other	0
Total	0

Technician RC
Job # 62459

Observations

AREA SURVEY REPORT
Hughes Utility Supply

Remarks _____

Date 10/30/2006 General area East

Contact points	Hydrants	17	Valves	24	Services	2	Other	0
----------------	----------	----	--------	----	----------	---	-------	---

Survey Start Points	Survey End Points	Distance (feet)
West end of Hillcrest Ave	Hillcrest Ave &Tribune Ave	1670
Tribune Ave & Parkside DrTribune Ave &Hayward Blvd	1556
Tribune Ave & Parkside DrParkside Dr &Hayward Blvd	2364
Intersecting Lines surveyed		383
Total miles		1.1
feet		5973

Start time 1:40 PM End time 3:15 PM Total minutes 95

LEAK SOUNDS		
	Location/Address	Access Point DB Lvl
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		

Valves	0
Hydrants	0
Services	0
Other	0
Total	0

Technician RC
 Job # 62459

Observations

References

City of Tempe

Box 5002
Tempe, AZ 85280-5002
480-350-2626
John Mann

Town of Marana

13251 N Lon Adams Rd
Marana, AZ 85653
520-297-2920
Joe Miller

City of Nogales

777 North Grand Ave
Nogales, AZ 85621
520-287-2868
Ken Horton

City of Prescott

PO Box 2059
Prescott, AZ 86301
928-776-6247
Stephen Dean

City of San Luis

PO Box 3750
San Luis, AZ 85349
520-627-8848
David Ford

Arizona – American Water Co.

15626 North Del Webb Blvd
Sun City, AZ 85351
623-815-3129
Brian Biesemeyer

City of Bisbee

118 Arizona St
Bisbee, AZ 85603
520-432-6000
Russ McConnell

City of Williams

113 South 1st Street
Williams, AZ 86046
520-635-4451
Ron Stillwell

IHS-San Carlos

PO Box 208
San Carlos, AZ 85550
520-475-7212
Chris Brady

City of Chandler

PO Box 4008 MS911
Chandler, AZ 85225
480-782-3585
Greg Capps

City of Lake Havasu City

900 London Bridge Rd
Lake Havasu City, AZ 86404
928-855-0336
Peter Manderfield

Apache Junction Water Co

PO Box 4768
Apache Junction, AZ 85278
480-982-6030
Brian Hall

Bid Questionnaire

Bid Questionnaire

Please note that as used in this Questionnaire, "Your" refers to Bidder's company. Bidders shall respond to all questions in an orderly manner.

1. What is the address of your office from which this City of Tempe contract will be administered, from which billing will be sent to the City and to which the City will issue payment?

Contract office: 10013 MLK Jr. Way S, Seattle, WA 98178

Remit to: PO Box 56214, Los Angeles, CA 90074-6214

2. Who is your assigned Project Manager to the City of Tempe?

Name Tom Ruppenthal

Phone 800-241-3420

3. Have you performed a leak detection survey on the following types of pipe material in a water distribution system?

	<u>Yes</u>	<u>No</u>
CIP	<u>X</u>	___
DIP	<u>X</u>	___
ACP	<u>X</u>	___
PVC	<u>X</u>	___

4. Have you performed leak detection surveys on potable water systems for at least 10 years?

Yes X No ___

5. Does your company accept all terms and conditions of the IFB?

Yes X No _____

6. Will your company perform all work for this contract in conformance with all OSHA, Federal, State, County and City safety requirements?

Yes X No _____

7. Will your company provide all required reports as indicated in this IFB?

Yes X No _____

8. Does your company have the expertise and qualifications to perform the services described in this IFB?

Yes X No _____

If yes, please provide a detailed description of your firm's qualifications and expertise to perform the services.

See attached Qualifications Section

9. Submit resumes of your assigned Project Manager that indicates work experience on similar projects. Also, submit resumes of project team to work on the City's contract (if currently known).

Yes X No _____ See attached Qualifications Section

10. If awarded the contract, are there any required services of the City not listed in this IFB?

Yes _____ No X

If Yes, please explain.

11. Submit a current Audiogram test performed on the operators to be assigned to this project that indicates their hearing is within acceptable standards for this type of work.

Yes X No _____

See attached

12. Provide 3 government and/or large industry references for which you have performed 50 or more miles of continuous leak detection using the type of equipment you propose to use in the City of Tempe. Each reference should include the type of pipe surveyed, i.e., CIP, DIP, ACP, and PVC. The references must indicate that all four types of requested pipe material have been surveyed by the vendor. All four pipe types need not have been surveyed in the same Utility's system. If necessary, please attach a reference sheet with this information:

	<u>Reference</u>	<u>Contact</u>	<u>Phone</u>	<u>Pipe Type Surveyed</u>
1.	City of Tempe, AZ	John Mann	480-350-2626	CIP, DIP, ACP & PVC
2.	Los Angeles County, CA	Melinda Barrett	626-300-3362	CIP, DIP, AC, STL & PVC
3.	Gainesville Regional Utilities, FL	John Gifford	352-334-3400	CIP, DIP, AC & PVC

IFB Checklist For Submittals

- One- (1) signed and complete original of the Bid response, including "Vendor's Bid Offer" (Form 201-B).
- Two- (2) additional Bid responses for evaluation purposes.
- The Bid Questionnaire has been completed and included.
- Price Information completed and included.
- Any addendum(s) have been included.
- Current audiograms for operators performing the leak survey.
- Sample reports.

Technician Audiogram Results

Client Report

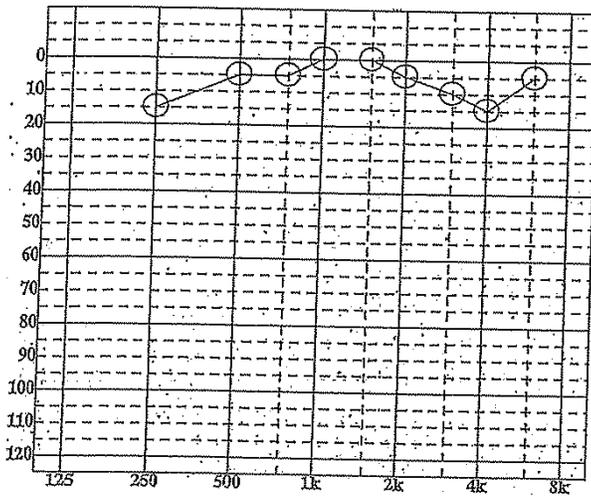
Client No.: 0000262 Birth Date: / /
 Last Name: Ruppel
 First Name: Jeff
 Occupation:
 Address 1: 16206 North East 36 Ave.
 Address 2:
 City/State/Zip: Ridgefield Wa 98412-
 Phone 1/2: 920-459-2746

Other:

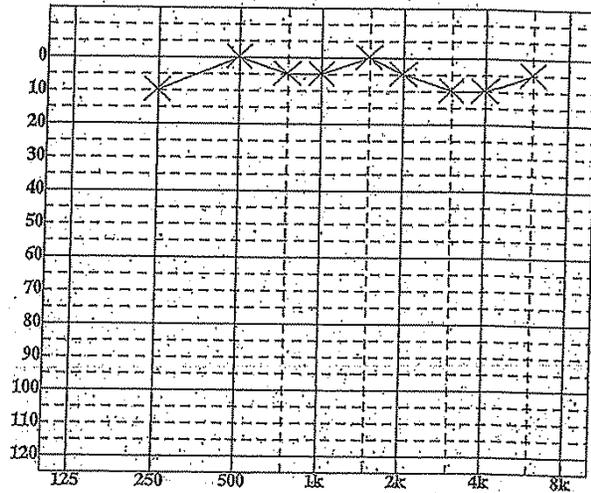
Referral: Physician:
 Social Security: Insurance 1#: Insurance 2#:
 Insurance 1: Insurance 2#:

Manufacturer: Hearing Instrument Right: Hearing Instrument Left: Remote Control:
 Type: Type: Type:
 No.: No.: No.:

Right:



Left:



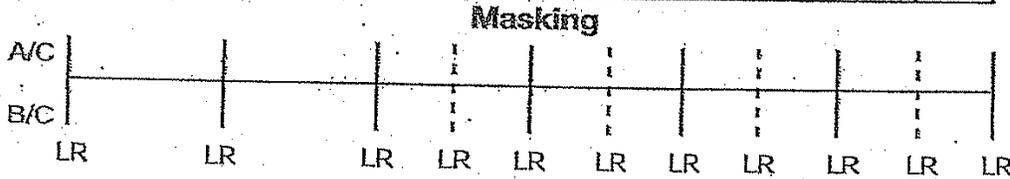
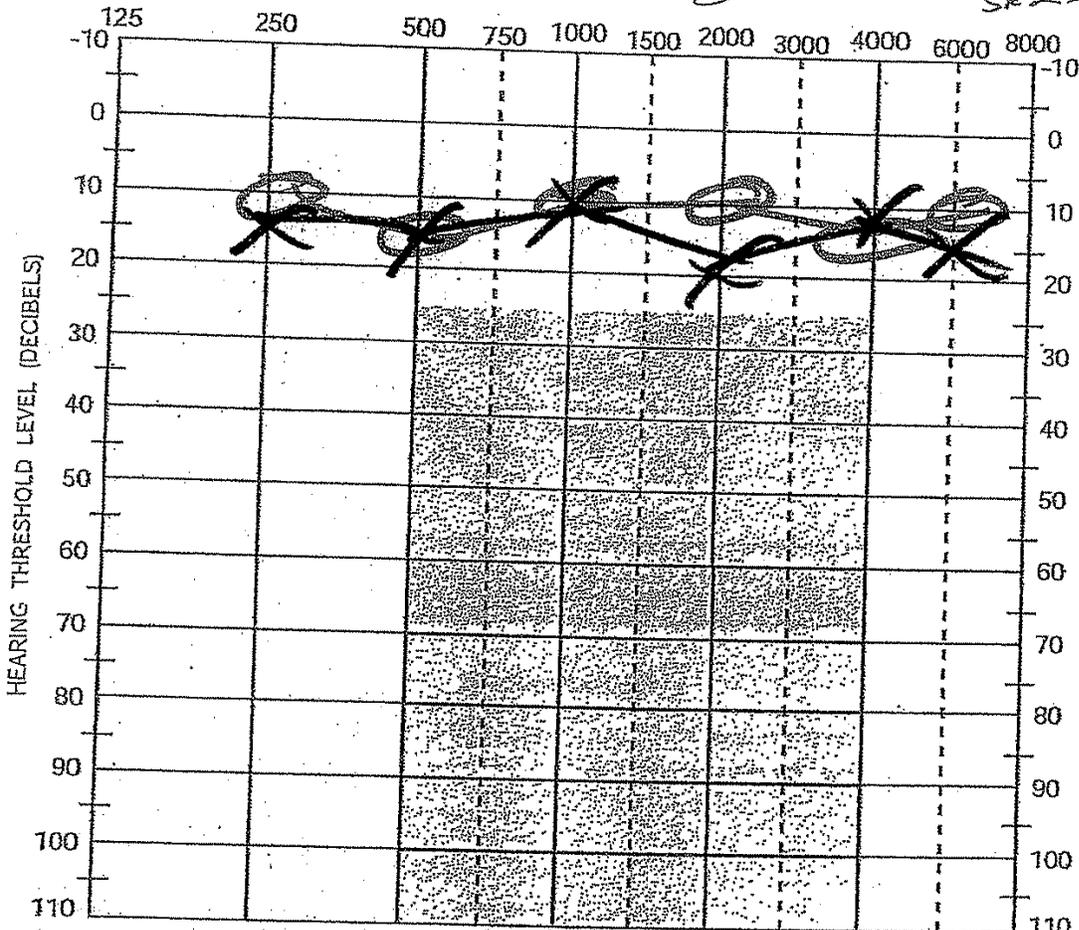
Speech MCL		Speech Reception Threshold						
		Phones				Sound Field		
Right	Left	Right	Mask Lvl	Left	Mask Lvl	Binaural	Right	Left
dB	dB	dB	dB	dB	dB	dB	dB	dB
Speech UCL					Aided 1:			
					Aided 2:			

Geoff Ashworth

Sears Hearing Aid Center
651 Sleater-Kinney
Lacey, WA 98503

PURE TONE AUDIOGRAM
FREQUENCY, HZ

200 950
562506



[] = Critical Area of Speech Understanding

AUDIOGRAM KEY

	LEFT	RIGHT
AC Unmasked	X	O
AC Masked	□	△
BC Mastoid Unmasked	>	<
BC Mastoid Masked		
BC Forehead Unmasked	I	I
MCL	M	M
UCL	U	U

BOTH	
BC Forehead Unmasked	Y
Sound Field	S

Examples of No Response Symbols	
X	O
□	△
>	<
I	I
M	M
U	U

Calibration SPL HTL Tape MLV
Audiometer Make *MR* Model *3*
 Headphones Inserts

SPEECH	Ear	Left	Right	Binaural
	SRT	dB	dB	dB
MCL		60 dB	60 dB	60 dB
UCL	dB	dB	dB	dB
WORD RECOG	%	%	%	%

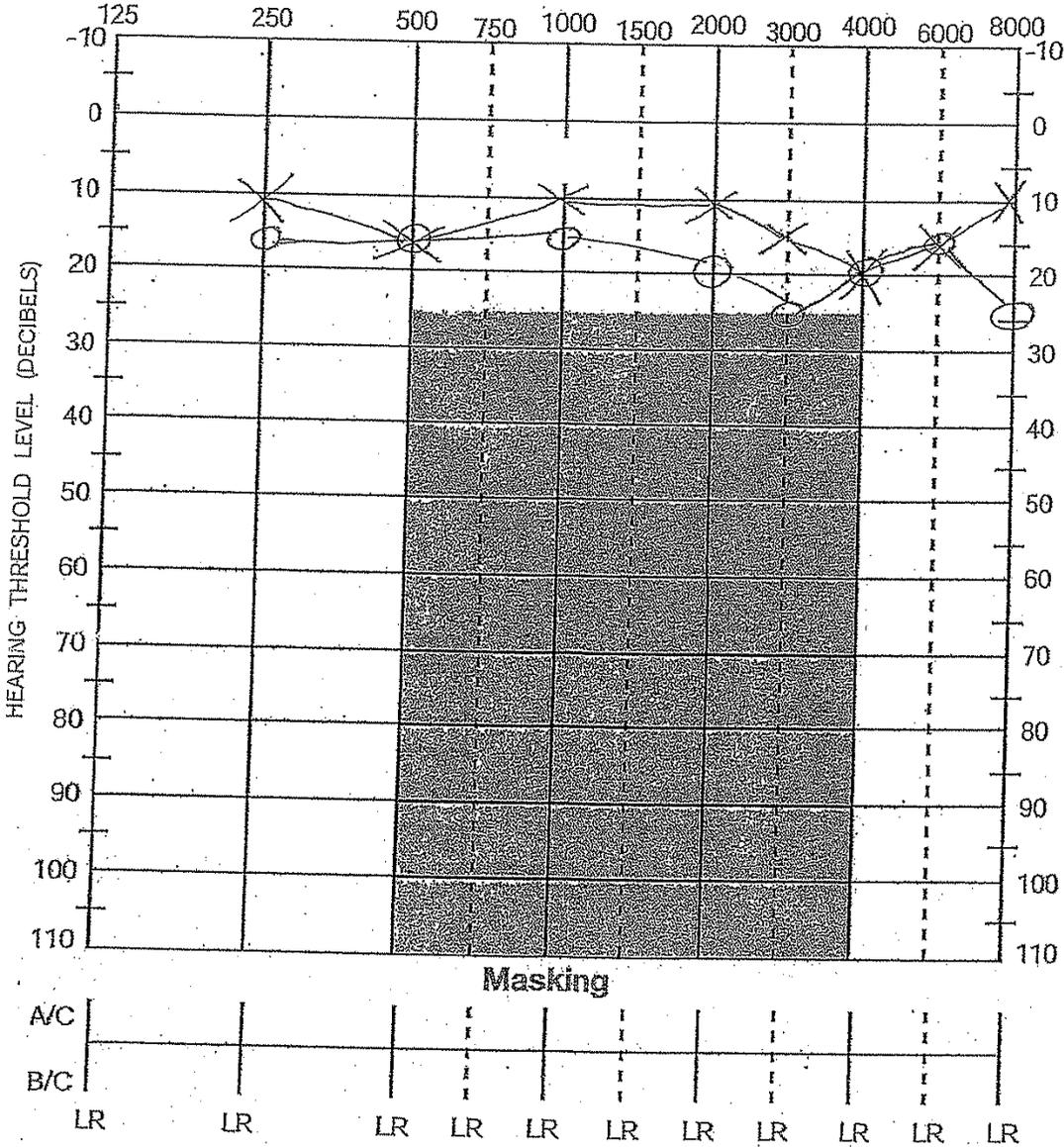
Quick SNR	Ear	SNR Loss
	R	dB SNR
	L	dB SNR
	BFN	dB SNR
	SF	dB SNR
Aided	dB SNR	

AVERAGE PURE TONE	Left	Right
	Air Conduction	
	Bone Conduction	

Room ambient noise level _____ dBA

PURE TONE AUDIOGRAM

FREQUENCY, HZ



= Critical Area of Speech Understanding

Fiorelli
7/16

AUDIOGRAM KEY

	LEFT	RIGHT
AC Unmasked	X	O
AC Masked	□	△
BC Mastoid Unmasked	>	<
BC Mastoid Masked] [] [
BC Forehead Unmasked		
MCL	M	M
UCL		

BOTH	
BC Forehead Unmasked	Y
Sound Field	S

Examples of No Response Symbols	
X	O
Y	S

Calibration SPL HTL Tape MLV
 Audfometer Make _____ Model _____
 Headphones Inserts

SPEECH	Ear	Left	Right	Binaural
	SRT		dB	dB
MCL		dB	55 dB	dB
UCL		dB	dB	dB
WORD RECOG	%	%	%	%

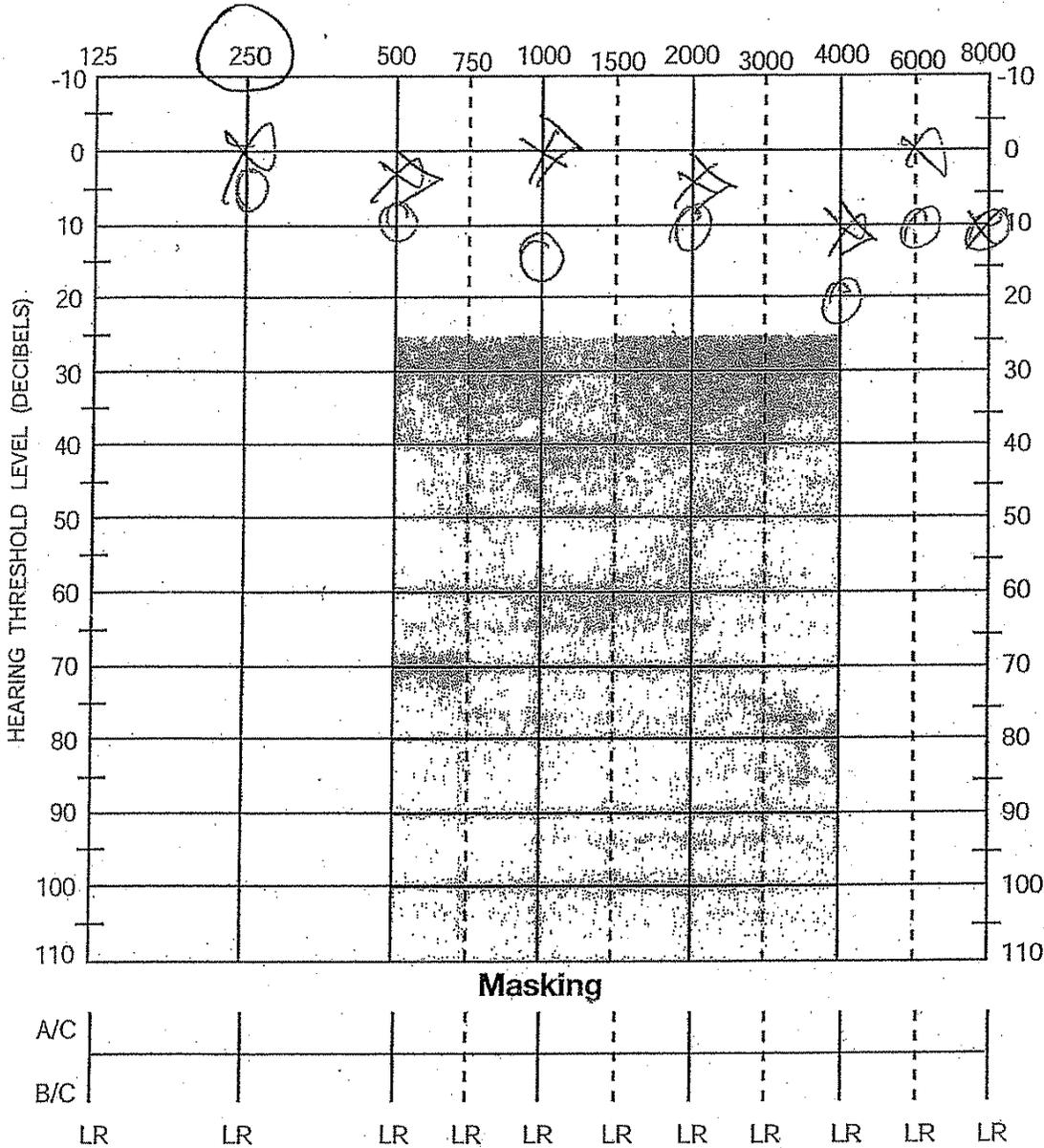
Quick SNR	Ear	SNR Loss
	R	dB SNR
	L	dB SNR
	BIN	dB SNR
	SF	dB SNR
Aided	dB SNR	

AVERAGE PURE TONE	Left	Right
	Air Conduction	
Bone Conduction		

Room ambient noise level _____ dBA

Rick House
3/2007

PURE TONE AUDIOGRAM
FREQUENCY, HZ



= Critical Area of Speech Understanding

AUDIOGRAM KEY

	LEFT	RIGHT
AC Unmasked	*	o
AC Masked	□	△
C Mastoid Unmasked	>	<
C Mastoid Masked] [[]
Forehead Unmasked		
Forehead Masked		
CL	M	M

BOTH

BC Forehead Unmasked

Sound Field

Examples of No Response Symbols

Calibration SPL HTL Tape MLV
 Audiometer Make *ME* Model *3*
 Headphones Inserts

	Ear	Left	Right	Binaural
SPEECH	SRT	dB	dB	dB
	MCL	<i>50</i> dB	<i>50</i> dB	dB
	UCL	dB	dB	dB

Quick SIN	Ear	SNR Loss
	R	dB SNR
	L	dB SNR
	BIN	dB SNR
	SF	dB SNR
Aided	dB SNR	

AVERAGE PURE TONE	Left	Right
Air Conduction		
Bone Conduction		